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(19)(CA) **APPLICATION FOR CANADIAN PATENT** (12)

(54) Method and Apparatus for Manufacturing Decorative Mouldings

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Notice: This application is as filed and may therefore contain an incomplete specification.

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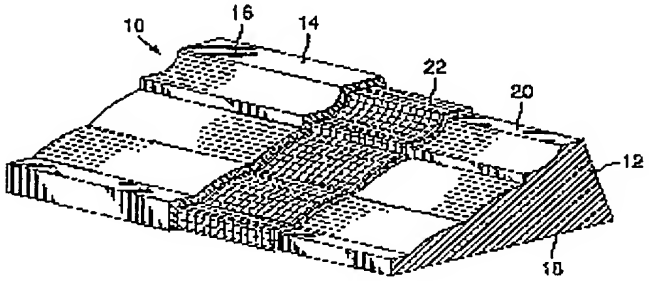
(12) **Patent:** (11) **CA 2184205**

(54) METHOD AND APPARATUS FOR MANUFACTURING DECORATIVE MOULDINGS

(54) INSTALLATION DE PRODUCTION DE MOULURES DECORATIVES ET METHODE CONNEXE

Representative Drawing:



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ABSTRACT:
The invention provides a method of manufacturing an elongate decorative moulding having a decorative surface, comprising the steps of: (a) placing a flat surface of an elongate foam moulding core on an input portion of a flat elongate table, the foam core comprising a flexible resilient expanded polymer foam solid having: said flat surface on one side; a decorative surface on another side and a cross-sectional profile, the cross sectional profile of the core being proportionally smaller than the desired cross sectional profile of the finished decorative moulding, the table including a smooth continuous planar top surface and a longitudinal axis; (b) aligning the foam core on said longitudinal axis of the table; (c) sliding the foam core on the top surface of the table forwardly along the axis through a coating containment chamber, the coating chamber: having a bottom surface defined by the top surface of the table; having a rearward opening larger than the core profile; side walls and a forward wall which includes a die, the die having a die opening with a profile proportionally larger than the cross sectional profile of the moulding core, the die opening having a profile conforming a desired cross

sectional profile; (d) applying a liquid coating material to the decorative surface of the moulding core as the foam core slides through the coating chamber, the flat surface of the core slidingly engaging the top surface of the table thus being shielded from coating material; (e) passing the coated moulding core through the die opening on to an output portion of the table top surface; and (f) curing the coating material after the moulding has passed the die. Also provided is a device for manufacturing an elongate moulding.

CLAIMS: Show all claims

*** Note: Data on abstracts and claims is shown in the official language in which it was submitted.

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FIELD OF THE INVENTION

The present invention relates to decorative mouldings of the type used in the construction industry to adorn walls and ceilings, specifically exterior mouldings with a foam core coated with stucco.

BACKGROUND OF THE INVENTION

Decorative mouldings have been used for some time in the construction industry. The mouldings used typically had a flat surface on one side and a decorative surface on the other. A visually appealing design, usually in three dimensions, is formed on the decorative surface of the moulding, while the flat surface is configured to fit against the wall or ceiling. The moulding is mounted to the wall such that the decorative surface is exposed to view. The moulding is attached to the wall by applying an adhesive to the flat surface of the moulding and then pressing the glued surface to the wall.

Traditionally, mouldings for the interior of buildings have been made of plaster or wood. Due to the relative weight, durability and inflexibility of plaster, traditional mouldings could not be used with all wall surfaces, especially on the exterior of a building. Wooden mouldings have become popular for some applications due to their relative flexibility and light weight. The cost of wooden mouldings can be high, and wooden mouldings tend to deteriorate if exposed to the elements.

Recently, exterior stucco finished mouldings have been made of foam. The foam mouldings are often composed of a expanded polymer such as polystyrene or polyurethane. Exterior prefabricated panels have been constructed using foam mouldings and foam panels mounted on a rigid frame or board. The foam moulding may be used as is, but in most cases the decorative surface of the moulding is covered with mesh, such as fiberglass, and then coated with either plaster or cement to give a stucco finish. Several layers of coating are

applied by hand by either spraying or trowelling. After the foam moulding is attached to the wall, the entire wall structure including flat portions and moulding are finish coated to produce a uniform stucco finish.

The application of the coating to the foam moulding has conventionally been done by hand. This is a time consuming labour intensive business and the quality of the finished product is not always consistent, since the skill of the applicator is critical.

In some cases the finished decorative surface is sloppy or the coating is of uneven thickness. The unevenness of the coating may make the moulding more rigid in some places than in others. The unevenness of the coating tends to make the coating crack and delaminate over time.

Where the building under construction is a relatively large project, it has been economical to construct prefabricated panels with foam moulding and flat panels. The finish in a factory setting can be more evenly applied and controlled than on an exposed construction site. This type of construction is not entirely satisfactory since it cannot be applied to smaller projects and renovations easily. In general, except for high volume industrial or commercial construction, the conventional method has been to apply coatings on site despite the above disadvantages.

SUMMARY OF THE INVENTION

The invention is a method of manufacturing an elongated decorative moulding having a decorative surface and a desired cross-sectional profile, comprising the steps of applying a first coating material to a moulded core and then passing the moulded core through the opening of a first die. Once hardened, the coated profile is again coated with a second coating material and then passed through a second die.

The moulded core generally has a flat surface on at least one side, a decorative surface on another side and a cross-sectional profile. The cross sectional profile of the moulded core

is proportionally smaller than the desired cross sectional profile of the finished decorative moulding. The coating material is applied to the decorative surface of the core and the profile of the die opening is proportionally larger than the cross-sectional profile of the core such that the decorative surface of the core is spaced from the die as it passes through the die opening.

The invention also comprises a device for coating a moulding core comprising a coating means for applying the coating material to the moulding core, a die for removing the excess coating material from the moulding core and a feeding means for pushing the moulding core through the coating means and through the die.

Specifically, the invention provides a method of manufacturing an elongate decorative moulding having a decorative surface, comprising the steps of: (a) placing a flat surface of an elongate foam moulding core on an input portion of a flat, elongate table, the foam core comprising a flexible resilient expanded polymer foam solid having: said flat surface on one side; a decorative surface on another side and a cross-sectional profile, the cross sectional profile of the core being proportionally smaller than the desired cross sectional profile of the finished decorative moulding, the table including a smooth continuous planar top surface and a longitudinal axis; (b) aligning the foam core on said longitudinal axis of the table; (c) sliding the foam core on the top surface of the table forwardly along the axis through a coating containment chamber, the coating chamber: having a bottom surface defined by the top surface of the table; having a rearward opening larger than the core profile; side walls and a forward wall which includes a die, the die having a die opening with a profile proportionally larger than the cross sectional profile of the moulding core, the die opening having a profile conforming a desired cross sectional profile; (d) applying a liquid coating material to the decorative surface of the moulding core as the foam core slides through the coating chamber, the flat surface of the core slidingly engaging the top surface of the table thus being shielded from coating material; (e) passing the coated moulding core through the

die opening on to an output portion of the table top surface; and (l) curing the coating material after the moulding has passed the die.

Also provided is a device for manufacturing an elongate moulding having a flat surface on one side, a decorative surface on another side and a cross-sectional profile, the device comprising: table means, having a smooth continuous elongate planar top surface, a longitudinal axis, an input portion, a midportion and an output portion, for supporting a flexible foam moulding core on said flat surface thereof as the core slides along the longitudinal axis; alignment means, on said input portion, for aligning the foam core on the longitudinal axis; a first coating containment chamber on said midportion having: a bottom surface defined by the top surface of the table; having a rearward opening larger than the core profile; side walls and a forward wall which includes a first die, the first die having a die opening with a profile proportionally larger than the cross sectional profile of the moulding core, the die opening having a profile conforming a desired cross sectional profile; and driving means for driving the foam core through the coating chamber, the flat surface of the core slidingly engaging the top surface of the table thus being shielded from coating material, and for passing the first coated core through the first die opening onto the output portion of the table top surface. Preferably, the die opening is beveled expanding rearwardly, the opening in a rearward side of the die being proportionally larger than the opening in a forward side of the die.

BRIEF DESCRIPTION OF THE DRAWINGS

Figure 1 is a perspective view of a finished decorative moulding with staggered layers to reveal the foam core, mesh and at least one coating layer, made by the method of the invention.

Figure 2 is a cross sectional view of the moulding shown in Figure 1.

Figure 3 is a side view of the apparatus of the present invention, with the foam core being passed by input conveyors through die openings in a housing filled with coating material, then to output conveyors.

Figure 4 is a partial long sectional view of the apparatus of Figure 3.

Figure 5 is a long sectional view of the coating device housing of the apparatus of Figure 3.

Figure 6 is a long sectional view of an alternate embodiment of the coating device of the apparatus of Figure 3.

Figure 7 is a front perspective view of the die portion of the device of Figure 3.

Figure 8 is a schematic side view, partly in cross section, of a portion of the device shown in Figure 5.

DESCRIPTION OF THE PREFERRED EMBODIMENT

Referring to Figures 1 and 2, an extruded decorative moulding according to the present invention is shown generally as item 10 and comprises a moulding core 12 having a coating 14. Moulding 10 has an exterior decorative surface 16 and a flat surface 18. Moulding core 12 has shaped surface 20 and flat surface 18. Between moulding core 12 and coating 14 is mesh 22, which is attached to the shaped surfaced 20 of the moulding core. Moulding core 12 can be made of a variety of light weight materials including wood and plastic. Preferably, moulding core 12 is made of an expanded or foamed plastic such as polystyrene or polyurethane. The material forming coating 14 can be plaster, cement or some other material commonly used to make decorative mouldings. Mesh 22 is a net like material that helps to bind coating 14 onto moulding core 12. Moulding core 12 is preferably either an elongated extrusion or cut foam with a constant cross section.

Moulding 10 has a cross sectional profile that is selected such that the moulding will be visually appealing when mounted to a wall or ceiling. Flat surface 18 of the moulding

allows the moulding to be attached to the wall with adhesives. The decorative surface 16 of moulding 10 is exposed for view.

To mount moulding 10 to a wall, an adhesive is placed on flat surface 18 and the surface is pressed to the wall. Preferably as shown in Figure 2, the mesh 22 is fabricated initially wrapped around the corners and attached to the flat surface 18. Before pressing the moulding to the wall, the mesh 22 is removed from the flat surface 18 and swung around to press it onto the flat wall surface as indicated by dashed lines and arrows in Figure 2.

The visual appeal of decorative surface 16 is governed by the cross sectional profile of the moulding. Generally, decorative surface 16 is substantially convex, but concave or complex surfaces may also be selected. As in the case of conventional wood mouldings or cut stone facades, various built up window frames, soffit and fascia constructions are possible.

The method of the present invention comprises the steps of applying a first coating material to a moulding core 12, passing the coated moulding core thought the opening of a first die while the coating material is pliable, hardening the first coating material at least partially, applying a second coating material to the coated moulding core while pliable, then passing the twice coated moulding core through a second die. Moulding core 12 is provided with substantially flat surface 18 and a shaped surface 20 and has a cross sectional profile approximately the same shape as the desired cross sectional profile of the finished moulding. The cross sectional diameter of moulding core 12 is selected to be approximately 1 cm less than the desired cross sectional diameter of the finished moulding.

Preferably, a mesh 22 is adhered to shaped surface 20 of moulding core 12 before the moulding core is coated. Mesh is commercially available with one side tacky which lifts off the foam core slightly during application of the first coating and is encased in the hardened coating. The mesh 22 reinforces and helps the first coating material to adhere to the surface of moulding core 12.

The first and second coating materials are preferably either a plaster or cement,

depending on the desired finished product. The first materials should be more granular than the second coating material. It has been discovered that a relatively granular coating material adheres better to the surface of moulding core 12, however, too granular a coating yields a finished product having too rough a surface. To overcome this problem, the second coating material should have a finer grain size to ensure a finished moulding with smooth surface. It has been discovered that a mixture made from a coarse grit sand forms an excellent first coating material and a mixture made from a finer 200 grit sand forms and excellent second coating material.

The dies have an opening with a profile substantially similar to that of the cross sectional profile of moulding core 12. The profile of the opening is slightly greater than the profile of the cross sectional profile such that the edges of the die opening are spaced between 1/8 to 1/4 inches away form the surface of moulding 12. The opening of the first die is slightly smaller than the opening of the second die.

Referring to Figures 7 and 8, the dies preferably comprise a flat plate 44 having a thickness of between 1/2 to 2 1/2 inches. As illustrated the edges 51 of the die opening are beveled, preferably at a 45 degree angle so that each die has a slightly larger opening or mouth 53 on one side of the die. The coated moulding 15, is inserted through mouth 53 of the die. Edges 51 of the die spreads the coating materials and removes any excess material.

The coating of the material onto moulding core 12 can be accomplished by passing the moulding core through a chamber having a quantity of coating material. The coating material can then be coated onto the moulding core by pouring or even spraying as the moulding core passes through the chamber.

The bevel of the die has been observed to have the effect of mixing and rolling the coating material during application as the moulding core passes through the chamber, as indicated in Figure 8. This action keeps the coating material in motion, and thereby maintains the moisture content, consistency and viscosity through continual mixing.

After the moulding core is coated with the first coating material it is left to harden at

least partially. The time necessary to harden the first coating depends on the thickness of the first coating and the coating material used. The first coating should be sufficiently hardened such that the second coat can be applied without damaging the first coating or falling off during the second coating process. If cement is used, hardening times of between four hours and 24 hours will generally be required for the first coating. After the first coating is sufficiently hardened, the coated moulding core is then coated with the second coating. The twice coated moulding core is then passed through the second die to remove the excess second coating material and to impart the final smooth finish.

An alternate embodiment of the method comprises the steps of coating moulding core 12 with a coating mixture, passing the coated moulding core through the opening of a first die, then immediately passing the moulding through the opening of a second die. The opening of the first die has a profile larger than the cross sectional profile of the moulding core. The opening of the second die has a profile greater than the cross sectional profile of the moulding core and slightly smaller than the profile of the first die's opening. The profile of the first die's opening is selected such that the edges of the first die adjacent of the opening are spaced between 1/6 and 1/8 inches from the moulding core. The profile of the opening of the second die is selected such that the edges of the second die adjacent of the opening are spaced between 1/32 and 1/16 inches from the moulding core. The profile of the opening of the second die is equivalent to the desired cross sectional profile of the finished moulding.

In both methods of producing the coated moulding, the flat surface of the moulding is shielded or covered so that it is not coated with the coating material. This creates a finished product having a coated decorative surface, and a non-coated flat surface.

Referring to Figures 3 and 4, an example coating machine that carries out the method of the present invention is shown generally as item 30 and consists of a flat table 32, feeder mechanism 34, aligner 36, and coating chamber 38. Moulding core 12 is placed onto the top of a table 32 and one end of the moulding core is inserted into feeder mechanism 34. The flat

surface of moulding core 12 is in contact with the top surface of table 32. The top surface of table 32 is preferably polished smooth and flat to permit moulding core 12 to slide easily along. Feeder mechanism 34 drives moulding core 12 through aligner 36. Aligner 36 guides moulding core 12 into coating chamber 38. Coating chamber 38 coats moulding core 12 with coating material as it passes through. Feeder mechanism 34 preferably comprises a pair of opposing conveyor belts 35 (see Figure 5) that are positioned to hold onto moulding core 12 between them. As conveyor belts 35 turn, moulding core 12 is pulled through feeder mechanism 34. The top surface of table 32 is preferably made of low friction material such as Teflon to reduce the amount of friction between the flat surface of moulding core 12 and the top of table 32. Feeder mechanism 34 pushes the moulding core past coating chamber 38 and the coated moulding core 15 is passed to a drying table (not shown) where the coating material hardens. Outfeed conveyors 134 are optionally provided to guide and pull the moulding core through the chamber, but of course the contact between outfeed conveyors and finished surface must be limited to hardened or non coated areas. For example, the output conveyors 134 may be surface mounted flush with the table 32 top to contact only the flat surface of the moulding core 12. The particular parts of coating machine 30 shall now be discussed.

Referring to Figures 4 and 5, a simple coating chamber 38 comprises coating compartment 40, filled with coating material and having a front wall 42, back wall 44 (or die) and open top 47. Front wall 42 is provided with opening 50, which is dimensioned to permit moulding core 12 to pass through. Back wall 44 is provided with a beveled opening 52, dimensioned to have a profile proportionally larger than the profile of moulding core 12. As moulding core 12 enters compartment 40, the coating material is applied through open top 47. As illustrated, the die 44 or back wall is preferably constructed of two layers 200 and 201. The forward layer 200 is of lightweight plastic to provide the bevel shape of the opening 52, whereas the rearward layer 201 is of steel to provide wear resistance and ensure that the desired profile shape is maintained.

A variety of methods of applying the coating material to the surface of the moulding can be used including spraying or pouring. Preferably, the coating material is poured directly over the top of moulding core 12 as it passes through compartment 40. Alternatively, compartment 40 may contain a sufficient volume of coating material such that moulding core 12 is coated as it passes through the compartment . The volume of coating materials is continuously replenished from top opening 47. An operator positioned above opening 47 may assist the coating step by trowelling the coating material over the moulding core as it passes through compartment 40.

The coating material is preferably wet plaster or cement, the viscosity of which is selected to permit the material to evenly coat the exposed surfaces of moulding core 12. Flat surface 18 is not coated with the coating material because it is shielded by close contact with the top surface of table 32. In some cases it has been found necessary to use rollers to press down on the foam core 12 to maintain contact with the table top, however where input conveyors 35 have a rubber surface, the friction with the conveyor holds the foam core down.

Referring to Figures 4 and 5, the portion of back wall 44 adjacent opening 52 forms a die 45. As the coated moulding core passes through opening 52, the portion of back wall 44 adjacent opening 52 removes excess coating materials from the moulding core. Opening 52 has a profile similar to, but proportionally smaller than, the desired profile of the finished moulding 10. Opening 52 imparts a cross-sectional profile onto the coated moulding core proportionally smaller than the desired cross-sectional profile of the finished moulding.

Back wall 44 is attached to coating chamber 38 by attachment means 49, which preferably comprises removable screws. Back wall 44 can be removed and replaced by another die by removing attachment means 49. In this way, coating chamber 38 can be adapted for each particular desired moulding and multiple layers of coating by simply replacing back wall 44 with the required die.

After moulding core 12 passes completely through coating camber 38, it is

transported to a drying table (not shown) and the coating is allowed to harden. After the first coating is hardened, coated moulding core 15 is ready for the application of the second coating material. Before coated moulding 15 is again passed through device 30, back wall 44 of coating chamber 38 is replaced with another die having a larger opening. Preferably, the profile of the opening of the replacement die is equivalent to the cross sectional profile of the finished moulding. Coated moulding 15 is passed through device 30 and a second coating is applied. The first coating should be sufficiently hard so that it will not crack or break during the second coating process. The distance between conveyor belts 35 in feeder mechanism 34 may have to be adjusted for the greater profile of the coated moulding core 15. The second coating step is identical to the first coating step, the only difference being the second coating material.

It will be apparent to those skilled in the art that this method and device may include a continuous process with two or more devices in line including drying ovens between coating chambers if desired.

Feeding mechanism 34 passes moulding 10 past coating chamber 38, preferably to a drying table (not shown) down stream of the coating device. Moulding 10 is allowed to dry sufficiently such that the coating is fully dried. A drying chamber (not shown) may be added down stream of coating chamber 38 to speed up the drying process. After moulding 10 has dried and cured, the moulding is ready for use.

Back wall 44 of coating chamber 38 preferably comprises one of the two dies. If moulding core 12 is to be coated with a first coating material, then wall 44 preferably comprises a die having an opening proportionally larger than the cross sectional profile of the moulding core. The opening of the die will also be proportionally smaller than the cross sectional profile of the desired finished moulding core. If the moulding core is being coated with the second coating material, then wall 44 preferably comprises a die having an opening with a profile identical to the desired cross sectional profile of the finished moulding. Figure 7 illustrates a die suitable for use. The preferred die may include a steel plate edge to

maintain the profile shape during wear, and a plastic light weight rear portion to guide the coating material in the beveled or arcuate shaped rear opening of the die.

Referring to Figure 7 and 8, opening 52 is surrounded by edge 51 of back wall 44. Edge 51 of back wall 44 is preferably beveled and has a mouth 53, immediately in front of and slightly larger than opening 52. It has been discovered that the beveled edge 51 surrounding opening 52 permits a smoother application of the coating material. The exact thickness of the coating is controlled by the dimensions of the openings of the dies. If a coating thickness of 1/2 inch is desired, the opening 52 should be dimensioned such that back wall 44 is spaced 1/2 inch away from coated moulding core 15 as the coated moulding core passes through the die. The smoothness of the surface of moulding 10 is controlled by the viscosity of the coating material and the bevel of the dies. If insufficient moisture is present in the mixture, then the finished surface of moulding 10 will be rough. It is a trivial task to regulate the moisture content of the mixture to reach the desired viscosity.

As best shown in Figure 3, the device preferably includes separate input and output conveyors 34 and 134, with independent drives. The surface of the conveyor belts 35 and 135 are rubber or other resilient frictional material to hold the core 12 against the flat table 32 surface and drive the core through the coating chamber 38. It has been found that drive systems using belt drives are not reliable and tend to slip resulting in surface irregularities in the finished moulding. Preferred drives are as illustrated using electric motors 202, chain drives 203, sprockets and gear drives 204.

Coating machine 30 can be modified to carry out the alternate coating method. Simply replacing coating chamber 38 with a two chambered coating device permits the two step coating method to be used in just one pass of the moulding core. Referring to Figure 6, an alternate coating device that carries out the alternate method of the present invention is shown generally as item 138. Coating device 138 comprises coating compartment 140 having a front wall 142, a back wall 144 and sizing compartment 146 having a back wall 148. Front wall 142 is provided with opening 150, which is dimensioned to permit moulding core 12 to

pass through. Back wall 144 is provided with an opening 152, dimensioned to have a profile proportionally larger than the profile of moulding core 12. Edge 151 of back wall 144 adjacent opening 152 is beveled. As moulding core 12 enters compartment 140, the coating material is applied. As the coated moulding core passes through opening 152, beveled edge 151 of back wall 144 adjacent opening 152 removes excess coating material from the moulding core. Opening 152 has a profile similar to, but proportionally larger than, the desired profile of the finished moulding 10. Opening 152 imparts a cross-sectional profile onto the coated moulding core proportionally larger than the desired cross-sectional profile of the finished moulding.

After passing through opening 152, the coated moulding core passes through the sizing chamber 146. The coated moulding core then passes through opening 154 and out of chamber 146. Opening 154 has the same profile as the desired cross-sectional profile of the finished moulding 10. Beveled edge 155 of wall 148 is adjacent opening 154 and imparts the desired cross-sectional profile to the finished moulding 10. Preferably, opening 154 has a cross sectional profile proportional to but slightly smaller than the profile of opening 152. Preferably, opening 152 is 1/4 inch larger than opening 154. Beveled edge 155 scrapes the excess coating material as the moulding passes opening 154. The excess coating material removed in chamber 146 may be passed to chamber 140 where it can be reused. It has been discovered that the use of two beveled dies, the first die being slightly larger than the second, imparts a superior finish to the product.

The exact thickness of the coating is controlled by the dimension of opening 154. If a coating thickness of 1/2 inch is desired, then opening 154 should be dimensioned such that die 148 is spaced 1/2 inch away from moulding core 12 as the moulding core passes through the die. The smoothness of the surfaces of moulding 10 is controlled by the relative sizes of opening 152 and 154, the beveled nature of the die openings, and viscosity of the coating material.

Moulding cores of various lengths can be used in this invention. Moulding core 12

may even have a different cross sectional profile than finished moulding 10. Preferably, moulding core 12 has a profile identical to, but proportionally smaller than, the desired cross-sectional profile. If the coating is thick enough; however, a different cross-sectional profile may be imparted on the finished moulding. If the cross sectional profiles of the finished moulding 10 is not proportionally the same as the cross sectional profile of moulding core 12, then the thickness of the coating will be uneven. It has been discovered that even coating thickness is desirable.

It is therefore to be understood that various other modifications and changes may be made in the construction and arrangement of parts comprising the preferred form of invention as described without departing from the spirit and scope of the invention as defined by the appended claims and reasonable equivalents thereof.

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I CLAIM:

1. A method of manufacturing an elongate decorative moulding having a decorative surface, comprising the steps of:

(a) placing a flat surface of an elongate foam moulding core on an input portion of a flat elongate table, the foam core comprising a flexible resilient expanded polymer foam solid having: said flat surface on one side; a decorative surface on another side and a cross-sectional profile, the cross sectional profile of the core being proportionally smaller than the desired cross sectional profile of the finished decorative moulding, the table including a smooth continuous planar top surface and a longitudinal axis;

(b) aligning the foam core on said longitudinal axis of the table;

(c) sliding the foam core on the top surface of the table forwardly along the axis through a coating containment chamber, the coating chamber: having a bottom surface defined by the top surface of the table; having a rearward opening larger than the core profile; side walls and a forward wall which includes a die, the die having a die opening with a profile proportionally larger than the cross sectional profile of the moulding core, the die opening having a profile conforming a desired cross sectional profile;

(d) applying a liquid coating material to the decorative surface of the moulding core as the foam core slides through the coating chamber, the flat surface of the core slidingly engaging the top surface of the table thus being shielded from coating material;

(e) passing the coated moulding core through the die opening on to an output portion of the table top surface; and

(f) curing the coating material after the moulding has passed the die.

2. A method according to claim 1 wherein, the die opening is beveled expanding rearwardly, the opening in a rearward side of the die being proportionally larger than the opening in a forward side of the die.

3. A method according to claim 1 wherein, the die is a removable plate.

4. A method according to claim 1 wherein, the coating chamber has an open top.

5. A method according to claim 4 wherein, the step of applying the coating includes trowelling the coating onto the decorative surface of the foam core.

6. A method according to claim 1 wherein, prior to the step of placing the core on the table, the method includes the step of securing a reinforcing mesh to the decorative surface of the core.

7. A method according to claim 1 including the further steps of:

(g) sliding the first coated foam core on the top surface of the table forwardly along the axis through a second coating containment chamber, the second coating chamber: having a bottom surface defined by the top surface of the table; having a rearward opening larger than the first coated core profile; side walls and a forward wall which includes a second die, the second die having a second die opening with a profile proportionally larger than the cross sectional profile of the first coated moulding core, the second die opening having a profile conforming a desired cross sectional profile;

(h) applying a second liquid coating material to a cured first coated decorative surface of the moulding core as the foam core slides through a second coating chamber, the flat surface of the core slidingly engaging the top surface of the table thus being shielded from the second coating material;

(i) passing the second coated moulding core through a second die opening on to an output portion of the table top surface; and

(j) curing the second coating material after the moulding has passed the second die.

8. A method according to claim 1 including the further step of:

sliding the coated foam core on the top surface of the table forwardly along the axis through a drying chamber, the drying chamber having a bottom surface defined by the top surface of the table.

9. A device for manufacturing an elongate moulding having a flat surface on one side, a decorative surface on another side and a cross-sectional profile, the device comprising:

table means, having a smooth continuous elongate planar top surface, a longitudinal axis, an input portion, a midportion and an output portion, for supporting a flexible foam moulding core on said flat surface thereof as the core slides along the longitudinal axis;

alignment means, on said input portion, for aligning the foam core on the longitudinal axis;

a first coating containment chamber on said midportion having: a bottom surface defined by the top surface of the table; having a rearward opening larger than the core profile; side walls and a forward wall which includes a first die, the first die having a die opening with a profile proportionally larger than the cross sectional profile of the moulding core, the die opening having a profile conforming a desired cross sectional profile; and

driving means for driving the foam core through the coating chamber, the flat surface of the core slidingly engaging the top surface of the table thus being shielded from coating material, and for passing the first coated core through the first die opening onto the output portion of the table top surface.

10. A device according to claim 9 wherein the die opening is beveled expanding rearwardly, the opening in a rearward side of the die being proportionally larger than the opening in a forward side of the die.

11. A device according to claim 9 wherein, the first die is a removable plate.

12. A device according to claim 9 wherein, the first coating chamber has an open top.

13. A device as defined in claim 9 further comprising a second coating chamber, on said midportion rearward of said first coating containment chamber, the second chamber having a bottom surface defined by the top surface of the table means; having a rearward opening larger than the first coated core profile; side walls and a forward wall which includes a second die, the second die having a second die opening with a profile proportionally larger than the cross sectional profile of the first coated moulding core, the second die opening having a profile conforming a desired cross sectional profile.

14. A device as defined in claim 9 wherein the driving means comprises a conveyor belt.

15. A device as defined in claim 14 wherein the conveyor belt has a resilient frictional surface.

16. A device as defined in claim 14 comprising an input conveyor belt with an associated input drive, and an independent output conveyor belt with an associated output drive.

17. A device as defined in claim 16 wherein the input and output drives each comprise gear drives.

18. A device as defined in claim 16 wherein the input and output drives each comprise chain drives.

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ABSTRACT

The invention provides a method of manufacturing an elongate decorative moulding having a decorative surface, comprising the steps of: (a) placing a flat surface of an elongate foam moulding core on an input portion of a flat elongate table, the foam core comprising a flexible resilient expanded polymer foam solid having: said flat surface on one side; a decorative surface on another side and a cross-sectional profile, the cross sectional profile of the core being proportionally smaller than the desired cross sectional profile of the finished decorative moulding, the table including a smooth continuous planar top surface and a longitudinal axis; (b) aligning the foam core on said longitudinal axis of the table; (c) sliding the foam core on the top surface of the table forwardly along the axis through a coating containment chamber, the coating chamber: having a bottom surface defined by the top surface of the table; having a rearward opening larger than the core profile; side walls and a forward wall which includes a die, the die having a die opening with a profile proportionally larger than the cross sectional profile of the moulding core, the die opening having a profile conforming a desired cross sectional profile; (d) applying a liquid coating material to the decorative surface of the moulding core as the foam core slides through the coating chamber, the flat surface of the core slidingly engaging the top surface of the table thus being shielded from coating material; (e) passing the coated moulding core through the die opening on to an output portion of the table top surface; and (f) curing the coating material after the moulding has passed the die. Also provided is a device for manufacturing an elongate moulding.

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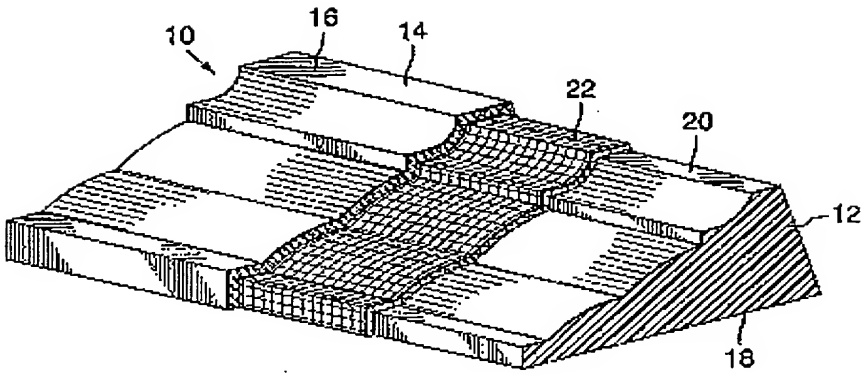

FIG.1

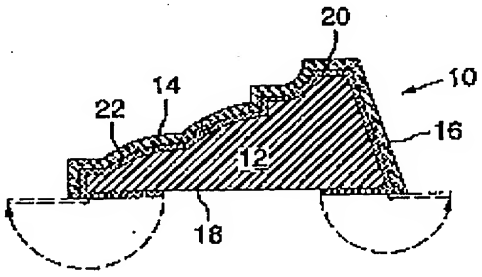

FIG.2

B

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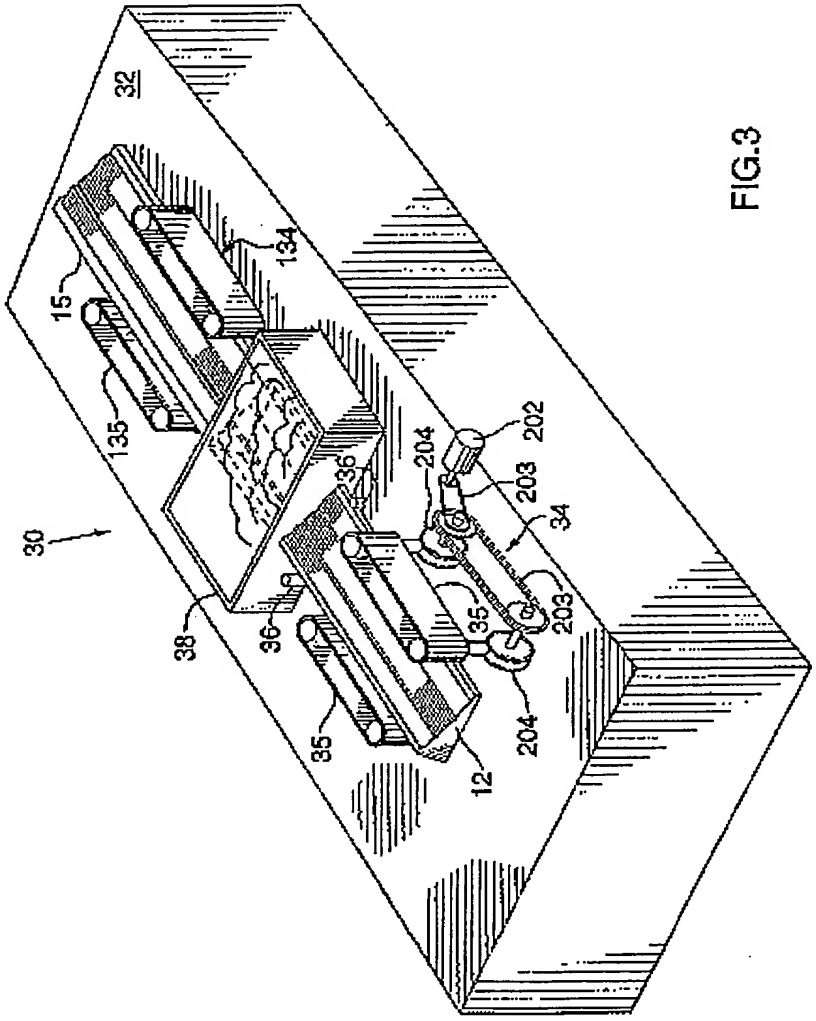

FIG.3

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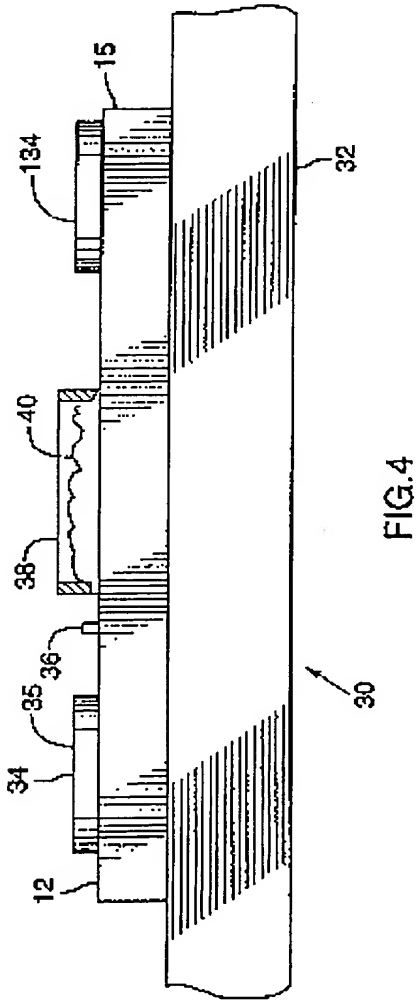

FIG.4

B

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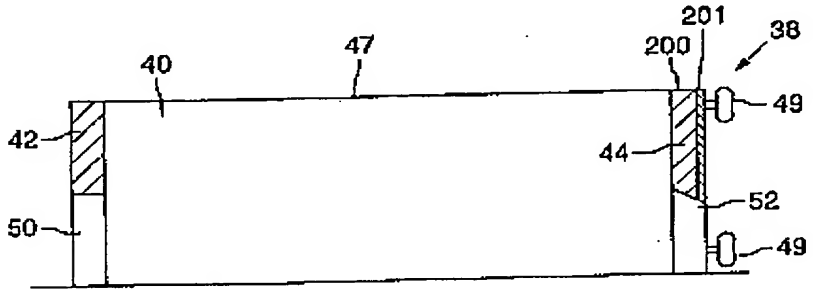

FIG.5

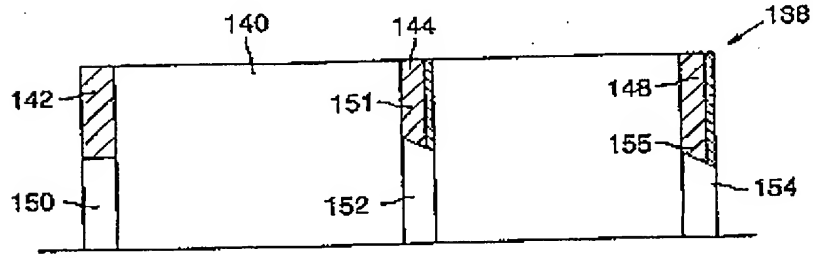

FIG.6

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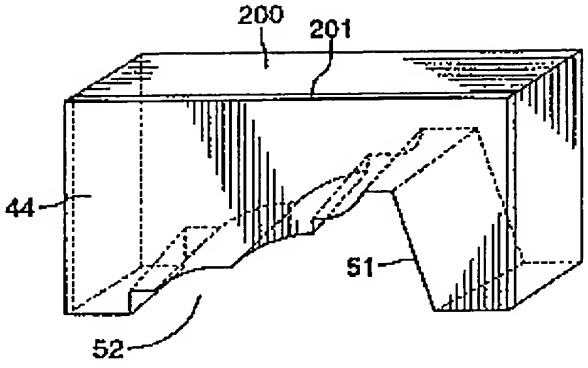

FIG.7

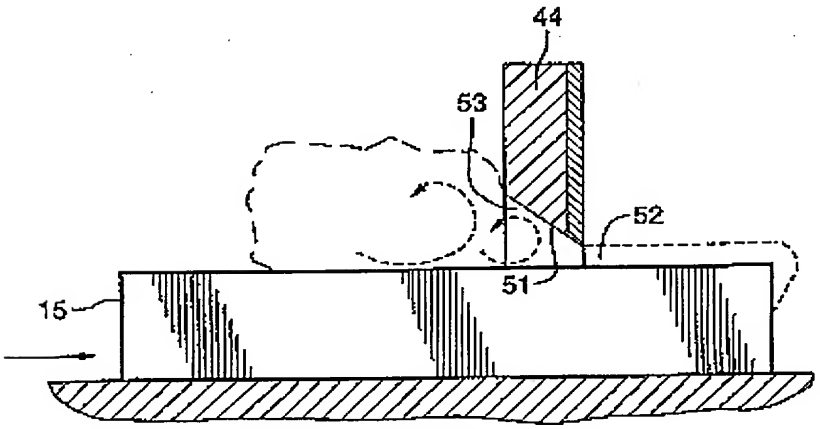

FIG.8